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(71) Applicant
Dr Tadeusz Walecki,
1 Peasborough View, Burley-in-Wharfedale, Yorks LS29 7RD

(72) Inventor
Dr Tadeusz Walecki

(74) Agent and/or Address for Service
Dr Tadeusz Walecki,
1 Peasborough View, Burley-in-Wharfedale, Yorks LS29 7RD

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(54) Power system containing generator and battery for driving a vehicle or vessel

(57) The power system consists of a combustion engine 1 driving a generator 2 which charges a battery 3 and also drives a propulsion motor 4 when the car or vessel is in motion. The cotrol unit 5 sets the parameters of the engine and generator in such a way as to achieve their maximum efficiency coefficient.

When the battery is discharged the control unit switches on the engine and generator. After the battery is charged the engine will switched off by the control unit and the motor will be driven by the battery.

When the car or vessel is standing the battery can be charged from a.c. mains and this way it can be used for short trips without using the combustion engine.

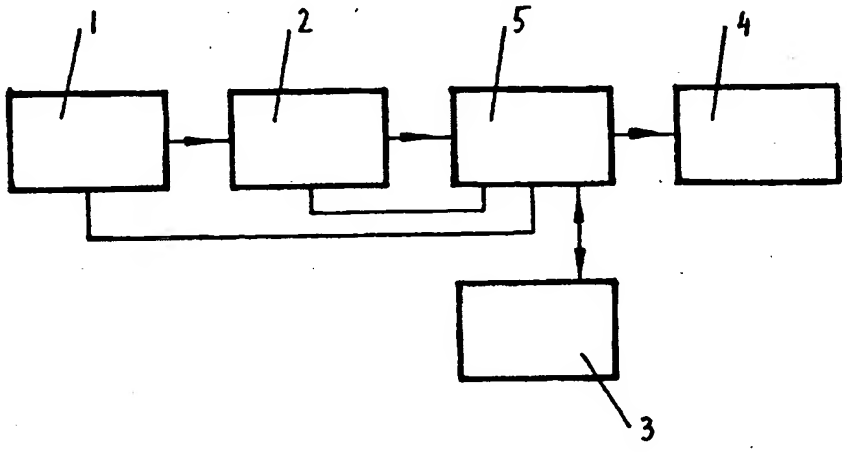

Fig. 1.

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The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

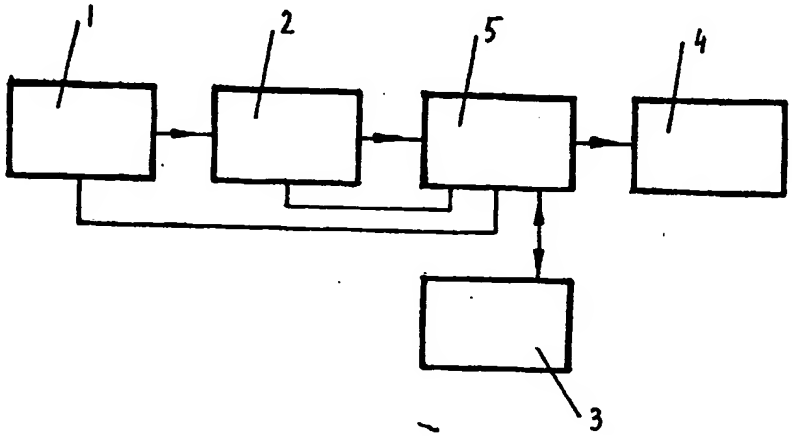

Fig. 1.

SPECIFICATION

Power system containing generator and battery for vehicle or vessel

This invention relates to motor vehicles or vessels.

The efficiency coefficient of the combustion engine depends on its revolutions per time unit. The electric motor has not got this disadvantage. The range that a battery driven car or vessel can go without recharging is limited by the capacity of the battery. Here the small range is a disadvantage.

An electric car or vessel driven by a battery and having also a generator will not have the above mentioned disadvantages.

The combustion engine-generator unit will work with maximum efficiency coefficient. After the battery is charged the engine will be switched off and the car or vessel will be driven from the battery. After the battery is discharged the engine will switched on again to charge the battery and drive the car as well.

Another advantage of this power system is that the battery can be charged from a.c. mains and this way the car or vessel can be used for short trips without using the engine-generator unit to charge the battery.

With the advent of this type of car exhaust pipe smoke free zones could be introduced where necessary. The cars would enter the zones with fully charged batteries and would be not allowed to use combustion engines there.

The advantage of the application of this power system to vessels would be a noiseless performance when driven from the battery.

The power system consists of a combustion engine 1 (Fig. 1) driving a generator 2. The generator charges the battery and also drives the motor 4 when the car or vessel is in motion.

The control unit 5 measures the currents of the generator and battery and switches on and off the engine and the generator. It also sets the parameters of the engine and generator in such a way as to achieve their maximum efficiency coefficient.

When the battery is discharged the control unit 5 switches on the engine 1 and generator 2. After the battery 3 is charged the engine 1 and generator 2 will be switched off by the control unit 5 and the motor will be driven by the battery 3.

The generator and motor can be either d.c. or a.c. In case of an a.c. generator a rectifier (not shown in Fig. 1) must be used to charge the battery. In case of an a.c. motor a d.c.–a.c. converter (not shown in Fig. 1) must be connected between the battery and the motor.

CLAIMS

1. A vehicle or vessel driving system is claimed, consisting of a combustion engine driving one or more d.c. or a.c. generators. The generator charges one or more batteries. The battery drives one or more motors. The motor drives one or more wheels of the vehicle or one or more propellers of the vessel. The vehicle or vessel driving system is characterized by the engine-generator unit working with maximum efficiency coefficient.

2. A vehicle or vessel driving system as claimed in Claim 1 characterized by a control unit switching off the engine automatically after the battery is charged and switching it on when it is discharged.

3. A vehicle or vessel driving system as claimed in Claim 1 characterized by a non-automatic switch to operate the engine.

4. A vehicle or vessel driving system consisting of more than one driving system as claimed in Claim 1, 2 and 3.

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